

CONTRACT LABORATORY DATA-REVIEW WORKSHEET**1.0 GENERAL INFORMATION**

Data reviewer: Gary Cottrell Review date: 5/17/12
 Office, Project, & Account #: WY, EPA Pavilion Fracking

2.0 DATA DELIVERABLES

Date of Lab analytical report: 5/15/12 Number of copies: bound _____ unbound 1
 No. of CD copies of raw-data report: 2 Remarks: _____

Raw-data report reviewed? Yes No Electronic data files on CD? Yes No

EDD file format: QWDATA TAL QUA08 ERPIMS Other

Date rec'd data deliverables: 5/16/12 Date sent deliverables to USGS office 5/17/12

3.0 INVOICE STATUS FOR LOT: OK

4.0 SAMPLE INFORMATION (Page #'s listed in this worksheet refer to lab analytical report)

Sample collection date(s): 4/22/12 Sample matrix: water

No. of sample types in lot: Environmental 2 Trip blank _____ Equip. blank _____

MS/MSD _____ Other: _____

Date samples received at laboratory: 4/24/12

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes No

If yes, list TAT period and if completed: 2 week, Yes (Note: hold placed - PS)

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES NO

If no, list missing or cancelled analyses and reason for non-performance: _____

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes No

If no, list sample/lab IDs, and associated problems or reference lab report case narrative:

Laboratory Job No: _____

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes No

If no, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes No NA

If no, list methods, surrogates, associated sample/lab IDs, lab report page #s:

4.6 Were dilution factors greater than 1 for **organic** analyses? Yes No NA

If yes, list analytical methods and reason for raised dilution factors: dilution _____
high-analyte levels matrix interferences _____ other _____

8270 C SIM - P22 - MW02 (preserved) + P22 TECs - P22

NOTE: 1-methylcyclohexene + 2-methylpropane - High

Diss Gases - P23 - MW02 (methane + Ethane high)

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes No NA

If yes, list analytical methods and reason for raised dilution factors:

high-analyte levels matrix interferences _____ other _____

TP - X2 - P25

Diss P-X2 - P26

C - X20 - P26

4.8 Additional comments about sample analyses: _____

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS5.1 Were any target analytes detected in the Laboratory Method Blanks? Yes No If yes, list method, analytes, prep batch #, report page #: TP = 2.33, RL = 5, MDL = 0.42 - P66Benzyl alcohol = 0.528, RL = 10, MDL = 0.23 - P38Multiple SVOC (SIM) - All well below the RL = P46Diss Na = 149, RL = 1000, MDL = 92 - P56Diss Sb = 0.782, RL = 2, MDL = 0.4; Diss Co = 0.08, RL = 1, MDL = 0.054 - P60Ammonia = 0.043, RL = 0.1, MDL = 0.022 - P645.2 Did lab control samples (LCS/LCSD) meet percent recoveries (%R) criteria? Yes No

If no, list method, analytes, LCS/LCSD, prep batch #, report page #: _____

5.3 Did the MS/MSD results meet %R or RPD acceptance criteria? Yes No NA _____

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If no, list method, analytes; MS, MSD or RPD; and lab report page #:

Acetone - MEK - Cl Methane - High % Rec - P35; Se Low Rec - P59 - 60Multiple VOC - 9% Rec outside limits - P36 (3 high, 1 low)Some Compounds out in the MSD - P37-38; Zn Low Rec - P59Benzoic acid - 144% Recovery (limits 40-100) - P45 (MSD = 112%)6-RD Spike << Sample Concentration - P49 + MSD 9% Rec High - RPD Good↳ Spike = 202; Sample 700 / 0.55 Se Low nSD rec - P62McMone Spike << Sample Conc - P50 - McPlane + Ethane % Rec High [assayed]Ammonia MS+MSD Low % Rec - P645.4 Did the lab-sample duplicate results meet RPD acceptance criteria? Yes No NA _____

If no, list method, analytes, prep batch #, report page #: _____

MS+MSD for TP + Diss Ph had low % Rec - P665.5 Additional comments about QC results: Fe spike << Sample Conc - P55 - MS+MSD % Rec OKNOTE: 6-RD Surrogate - MS+MSD - 0% Rec - P46 [605 surrogate off]Propane spike << Sample Conc [MS+MSD - P51, MSD - P52] - % Rec OKPropane Spike << Sample Conc [MS+MSD - P56] - % Rec very lowNa Spike << Sample Conc [MS+MSD - P55] - % Rec OK; same for Diss Na - P57

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

- VOCs by GC/MS--method 8260B/ 524.2 [water (W) or solids (S) analysis holding-time (HT) of 14 days]
- Gasoline Range Organics (GRO)+BTEX-method 8015B(GRO)/ 8021 [W and S: analysis HT 14 days]
- Diesel Range Organics-method 8015B-DRO [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- Pesticides by GC--method 8081A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- PCBs by GC--method 8082 [W: prep HT 7 days. S: prep HT 14 days; analysis HT 40 days]
- Pesticides by GC--method 8141A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- Herbicides by GC--method 8151A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- SVOCs by GC/MS--method 8270C [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- Dioxins and Furans--methods 8280/ 8290/ 1613 [W and S: prep HT 30 days; analysis HT 45 days]
- PAHs by ~~HPLC~~ method 8310 ~~SEM SPIC~~ [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- Explosives by HPLC method 8330 or 8321A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B [W/S: analysis HT 28 days]
- Total organic carbon (TOC) or DOC--methods 415.1 or 9060 or 5310B [W: analysis HT 28 days]
- Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS [W: analysis HT 28 days]
- Metals by ICP--method 6010B or 200.7 [W and S: analysis HT 180 days]
- Metals by ICP/MS--method 6020 or 200.8 [W and S: analysis HT 180 days]
- Mercury by CVAA--method 7470A (W) and 7471A (S) [W and S: analysis HT 28 days]
- Inorganic anions--method 300/~~9050~~ [W: analysis HT 48 hours- NO₂, NO₃, ortho-P; HT 28 days--Br, Cl, F, SO₄]
- Total dissolved solids (TDS)--method 2540C and(or) TSS--method 2540D [W: analysis HT 7 days]
- Alkalinity--method 310.1 (Total, OH, HCO₃, and CO₃) [W: analysis HT 14 days]
- Nitrogen, ammonia--method 350.1 [W: analysis HT 28 days]
- Nitrogen, TKN--method 351.2 [W: analysis HT 28 days]
- Nitrogen, nitrate + nitrite--method 353.2 [W: analysis HT 28 days] NO₃ or NO₂ only [HT 48 hours]
- Nitrogen, nitrite--method 353.2 or 354.1 [W: analysis HT 48 hours]
- Phosphorus--method 365.3 and ortho P by 365.3 [Phosphorus: W: analysis HT 28 days, ortho P 48 hours]
- Phosphorus--method 365.1 and ortho P by 365.1 [Phosphorus: W: analysis HT 28 days, ortho P 48 hours]
- Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 [W and S: analysis HT 14 days]
- MBAS surfactants – method 425.1 (**HT 48 hours**)
- Moisture content--methods D2216 or 160.3M
- BOD--method 405.1 (**HT 48 hours**) or COD--method 410.4
- Turbidity--method 180.1 (**HT 48 hours**); Hardness 2340B
- Physical properties: pH--method 4500 H B; specific conductance—method 2510B
- Other analyses: Glycols - 8015, Gases - RIKit5, MBAS - 425.1